

WHAT IS CLAIMED IS:

1. A polymerizable composition comprising:

(A) a compound which causes at least one of decarboxylation and dehydration by heat;

5 (B) a radical initiator;

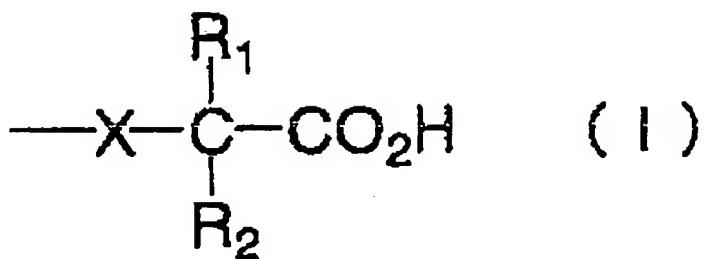
(C) a compound having at least one ethylenically unsaturated bond; and

(D) an infrared ray absorber.

10 2. The polymerizable composition according to claim 1, wherein the compound (A) is one which causes at least one of decarboxylation and dehydration at a temperature of 100°C to 300°C.

15 3. The polymerizable composition according to claim 1, wherein the compound (A) is one having a structure capable of forming a 4 to 6-membered lactone ring, a 4 to 6-membered lactam ring or a 4 to 6-membered cyclic acid anhydride.

20 4. The polymerizable composition according to claim 1, wherein the compound (A) is one having at least one group represented by the following formula (I):



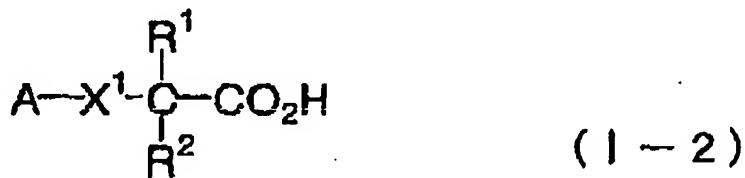
wherein:

X represents a divalent connection group selected from  
 $-O-$ ,  $-S-$ ,  $-SO_2-$ ,  $-NH-$ ,  $-N(R^3)-$ , and  $-CO-$ ,

5         $R^3$  represents a hydrogen atom or a monovalent substituent,

$R^1$  and  $R^2$  each independently represents a hydrogen atom or a monovalent substituent, provided that  $R^1$  and  $R^2$ , or either one of  $R^1$  and  $R^2$  and  $R^3$  may be taken together to form a ring  
10      structure.

5. The polymerizable composition according to claim 1,  
wherein the compound (A) is a monocarboxylic acid compound represented by the following formula (I-2):



wherein

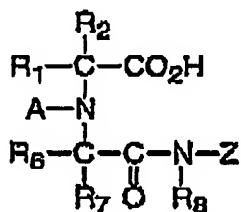
A represents an aromatic group or a heterocyclic group,

R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrogen atom  
or a monovalent substituent, provided that R<sup>1</sup> and R<sup>2</sup>, either  
one of R<sup>1</sup> and R<sup>2</sup> and X<sup>1</sup>, either one of R<sup>1</sup> and R<sup>2</sup> and A, or A and  
X<sup>1</sup> may be taken together to form a ring structure,

X<sup>1</sup> represents a divalent connection group selected from  
-O-, -S-, -SO<sub>2</sub>-, -NH-, -N(R<sup>3</sup>)-, -CH<sub>2</sub>-, -CH(R<sup>4</sup>)-, and -C(R<sup>4</sup>)(R<sup>5</sup>)-,  
and

R<sup>3</sup>, R<sup>4</sup>, and R<sup>5</sup> each independently represents a hydrogen  
atom or a monovalent substituent.

6. The polymerizable composition according to claim 1,  
wherein the compound (A) is a compound represented by the  
following formula:



20 wherein

A represents an aromatic group or a heterocyclic group,

R<sup>1</sup>, R<sup>2</sup>, R<sup>6</sup>, R<sup>7</sup> and R<sup>8</sup> each independently represents a  
hydrogen atom or a monovalent substituent, provided that R<sup>1</sup>  
and R<sup>2</sup>, either one of R<sup>1</sup> and R<sup>2</sup> and A, or R<sup>8</sup> and Z may be taken  
25 together to form a ring structure,

and

Z represents a monovalent substituent.

7. A polymerizable composition comprising:

- 5       (A-1) a monocarboxylic acid compound represented by the  
following formula (I-2);  
  
         (B) a radical initiator;  
  
         (C) a compound having at least one ethylenically  
unsaturated bond; and  
  
10      (D) an infrared ray absorber:



wherein

- A represents an aromatic group or a heterocyclic group,  
15      R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrogen atom  
or a monovalent substituent, provided that R<sup>1</sup> and R<sup>2</sup>, either  
one of R<sup>1</sup> and R<sup>2</sup> and X<sup>1</sup>, either one of R<sup>1</sup> and R<sup>2</sup> and A, or A and  
X<sup>1</sup> may be taken together to form a ring structure,  
  
X<sup>1</sup> represents a divalent connection group selected from  
20      -O-, -S-, -SO<sub>2</sub>-, -NH-, -N(R<sup>3</sup>)-, -CH<sub>2</sub>- , -CH(R<sup>4</sup>)-, and -C(R<sup>4</sup>)(R<sup>5</sup>)-,  
and

$R^3$ ,  $R^4$ , and  $R^5$  each independently represents a hydrogen atom or a monovalent substituent.

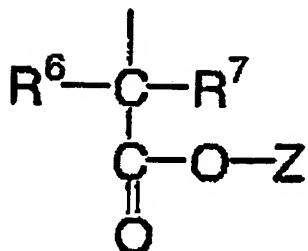
8. The polymerizable composition according to claim 7,  
5 wherein  $X^1$  in the formula (I-2) is a divalent connection group selected from  $-NH-$ ,  $-N(R^3)-$ ,  $-CH_2-$ ,  $-CH(R^4)-$ , and  $-C(R^4)(R^5)-$ .

9. The polymerizable composition according to claim 7,  
wherein  $X^1$  in the formula (I-2) is a divalent connection group  
10 selected from  $-NH-$  and  $-N(R^3)-$ .

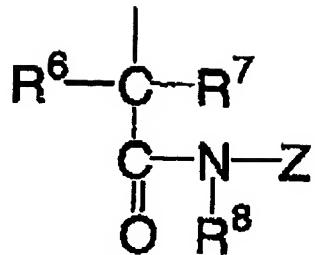
10. The polymerizable composition according to claim 7,  
wherein  $X^1$  in the formula (I-2) is  $-N(R^3)-$ .

15 11. The polymerizable composition according to claim 7,  
wherein the substituent represented by  $R^3$  contains at least one of  $-CO_2-$  and  $-CON(R^8)-$  in its structure in which  $R^8$  represents a hydrogen atom or a monovalent substituent.

20 12. The polymerizable composition according to claim 7,  
wherein the substituent represented by  $R^3$  is represented by one of the following formulae (i) and (ii):



(i)



(ii)

wherein,  $R^6$ ,  $R^7$  and  $R^8$  each independently represents a hydrogen atom or a monovalent substituent,  $Z$  represents a monovalent substituent, and  $R^8$  and  $Z$  may be taken together to form a ring structure.

5

10

15

15

13. The polymerizable composition according to claim 7, wherein the monovalent substituent represented by  $R^1$  and  $R^2$  is a halogen atom, an optionally substituted amino group, an alkoxycarbonyl group, a hydroxyl group, an ether group, a thiol group, a thioether group, a silyl group, a nitro group, a cyano group, an optionally substituted alkyl group, an optionally substituted alkenyl group, an optionally substituted alkynyl group, an optionally substituted aryl group, or an optionally substituted heterocyclic group.

14. A lithographic printing plate precursor comprising

a support and a recording layer containing a polymerizable composition which comprises: (A) a compound which causes at least one of decarboxylation and dehydration by heat; (B) a radical initiator; (C) a compound having at least one ethylenically unsaturated bond; and (D) an infrared ray absorber.

15. A lithographic printing plate precursor comprising a support and a recording layer containing a polymerizable composition which comprises: (A-1) a monocarboxylic acid compound represented by the following formula (I-2); (B) a radical initiator; (C) a compound having at least one ethylenically unsaturated bond; and (D) an infrared ray absorber:



15

wherein

A represents an aromatic group or a heterocyclic group,  
R<sup>1</sup> and R<sup>2</sup> each independently represents a hydrogen atom  
or a monovalent substituent, provided that R<sup>1</sup> and R<sup>2</sup>, either  
20 one of R<sup>1</sup> and R<sup>2</sup> and X<sup>1</sup>, either one of R<sup>1</sup> and R<sup>2</sup> and A, or A and  
X<sup>1</sup> may be taken together to form a ring structure,

$x^1$  represents a divalent connection group selected from  
 $-O-$ ,  $-S-$ ,  $-SO_2-$ ,  $-NH-$ ,  $-N(R^3)-$ ,  $-CH_2-$ ,  $-CH(R^4)-$ , and  $-C(R^4)(R^5)-$ ,  
and

$R^3$ ,  $R^4$ , and  $R^5$  each independently represents a hydrogen  
atom or a monovalent substituent.